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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,084	09/16/2003	Peter J. Wilk	W07-511	1679

7590 01/29/2009  
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714 Colorado Avenue  
Bridgeport, CT 06605-1601

EXAMINER
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CHENG, JACQUELINE

ART UNIT	PAPER NUMBER
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3768

MAIL DATE	DELIVERY MODE
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01/29/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/663,084	Applicant(s) WILK ET AL.	
	Examiner JACQUELINE CHENG	Art Unit 3768	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24, 28-32 and 37-42 is/are rejected.
- 7) ☒ Claim(s) 25-27 and 33-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/16/03 12/15/03 8/19/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).
2. Misnumbered claim 40 (the last claim) has been renumbered 42.

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 31-36 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31-35 of U.S. Application No. 09/514928.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they claim substantially the same subject matter. All of claim 31 plus claim 32 of the current application is in claim 31 of 09/514928. Dependent claims 33, 34 and 35 of the current application correspond to the same claim numbers in 09/514928. Claim 36 of the current application is all covered in claim 35.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 5-10, 12-17, 19-22, 31, 37, and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Savord (US 6,126,602). Savord discloses a phased array acoustic system for producing 3D images of a body part. The acoustic system of Savord comprises a multiplicity of electromechanical transducers mounted to a carrier arranged as a two-dimensional array, a one-dimensional array or a 1.5 dimensional array. The transducers array can be arranged into separate transmit and receive arrays. An energization means transmits electronic pulses to the transmitters to produce first pressure waves in an ultrasonic frequency towards a patient, and a receive processor, which includes delay elements (which can be a switched capacitor filter) to

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independently construct the delay to the transducer signals, receives the returned ultrasonic signals (2nd pressure waves) and processes them in order to provide a 3D image data of the area of interest (col. 4 line 22-41, col. 14 line 1-57).

7. Claims 13, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilk (US 5,871,446). Wilk discloses a medical system comprising of a plurality of electromechanical transducers mounted to a carrier, an energization means for producing a first pressure wave in a patient, and a control unit for controlling the energization means the receiving unit and the processor/analyzer for transforming the returned ultrasonic signals (2<sup>nd</sup> pressure waves) into a 3D image of the region of interest (abstract, col. 1 line 54-67).

8. Claims 39-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Hossack (US 6,179,780 B1). Hossack discloses a medical ultrasound 3D imaging system comprising multiple transmit beam sets and multiple receive beam sets. The transmit beam sets are transmitted in a phased array and in order to prevent cross talk, the transmit beams can be coded and the receive beamformer can comprise a decoder in order to decode the returned beams.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savord and further in view of Pirschel. Savord does not disclose using the transducer array with a fluid filled bag, however it is well known in the art to use a conducting medium to facilitate transmission of the ultrasonic waves to and from the body. Pirschel teaches such a conducting medium in the form of a flexible removable fluid filled bag (col. 8 line 67-col. 9 line 3). It would be obvious to use such a bag of Pirschel with Savord to further the utility of Savord in order to facilitate efficient ultrasound energy transmittal.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savord and further in view of Sarvazyan (US 5,606,971). Savord does not disclose using the transducer array with a conducting medium, however it would be obvious to couple the transducer array with a coupling medium in order to facilitate transmission of ultrasonic waves to and from the body. Sarvazyan teaches the transducer array being coupled with a chamber for holding a fluid (fig. 1, col. 3 line 53-60). It would be obvious to add a chamber for holding fluid to Savord in order to further the utility of Savord in order to facilitate efficient ultrasound energy transmittal.

12. Claims 3, 23, 24, 28-30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savord and further in view of Ries (US 5,605,154). Savord does not explicitly disclose how the transducers are placed it would be obvious to place the transducers in any well known configuration such as the one disclosed by Ries. Ries discloses the transducer arrays being placed

upon multiple rigid modular substrates which are movably connected to each other (fig. 15, fig. 16, col. 12 line 17-43). It would be obvious to add this structure to Savord in order to further the utility of Savord in order to correct for ultrasound beam phase errors.

13. Claims 1, 11, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilk. Wilk discloses most of what is claimed as discussed above in paragraph 4 except Wilk does not explicitly disclose the transmit pulse sequence being a phased-array. However Wilk does disclose the transducers being energized in a predetermined sequence which is capable of being in a phase array sequence (col. 3 line 25-32).

14. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hossack and further in view of Holland (US 5,685,307). Hossack does not disclose the transducers mounted to a flexible web, however it would be obvious to do so as taught in Holland. Holland teaches an embodiment, that instead of a rigid tissue contact surface, the contact surface (which comprises the transducers) be constructed from a flexible material (which could be a web) to allow the transducer array to make matching contact with the tissue surface (col. 4 line 52-57). It would be obvious to combine Holland with Hossack to further the utility of Hossack so that the transducer array can be used upon any irregularly shaped body surface.

*Allowable Subject Matter*

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15. Claims 25-27 and 33-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACQUELINE CHENG whose telephone number is (571)272-5596. The examiner can normally be reached on M-F 10:00-6:30.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian L Casler/  
Supervisory Patent Examiner, Art Unit  
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JC